

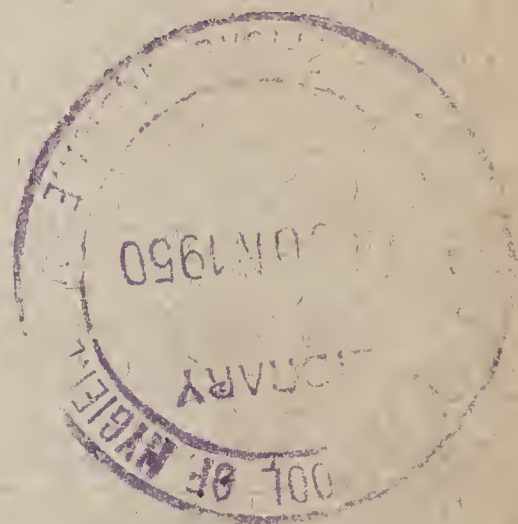
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NIGERIA

# Annual Report on the Medical Services for the Year 1948

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# CONTENTS

<i>Paragraphs</i>	<i>Page</i>
I—INTRODUCTION .. .. .	3
II—ADMINISTRATION	
(a) Staff .. .. .	3
(b) Legislation .. .. .	4
(c) Finance .. .. .	5
III—PUBLIC HEALTH	
(a) Health of Expatriate Population .. .. .	6
(b) General Health .. .. .	6
IV—VITAL STATISTICS .. .. .	7
V—HYGIENE AND SANITATION	
A. Preventive Measures	
(1) Insect-borne Diseases	
(a) Malaria .. .. .	7
(b) Sleeping Sickness .. .. .	10
(2) Epidemic and Endemic Diseases	
(a) Relapsing Fever .. .. .	17
(b) Cerebro-spinal Fever .. .. .	17
(c) Smallpox .. .. .	19
(d) Leprosy .. .. .	19
(e) Yellow Fever .. .. .	20
(f) Venereal Disease .. .. .	20
(3) Helminthic Diseases	
(a) Ankylostomiasis .. .. .	20
(b) Schistosomiasis .. .. .	20
(c) Guineaworm .. .. .	20
(d) Onchocerciasis .. .. .	21
(e) Filariasis .. .. .	21
B. General Measures of Sanitation	
(1) Water Supply .. .. .	21
(2) Sewage Disposal .. .. .	21
(3) Refuse Disposal .. .. .	21
(4) Inspection of Nuisances .. .. .	22
C. School Hygiene .. .. .	22
D. Labour Conditions .. .. .	22
E. Food in relation to Health and Diseases .. .. .	22
VI—TRAINING OF MEDICAL SERVICES PERSONNEL .. .. .	23
VII—PORT HEALTH WORK AND ADMINISTRATION .. .. .	24
VIII—MATERNITY AND CHILD WELFARE .. .. .	25
IX—DENTAL SERVICE .. .. .	25

<i>Paragraphs</i>	<i>Page</i>
X—HOSPITALS, DISPENSARIES AND OTHER UNITS	
A. Existing Facilities .. .. .	26
B. Additions to Hospitals and Training Schools .. .. .	26
C. Rural Health Centres .. .. .	27
D. Medical Field Units .. .. .	27
E. Research .. .. .	27
XI—PANEL OF VISITORS .. .. .	27
XII—MENTAL HEALTH .. .. .	27
XIII—LABORATORY SERVICE .. .. .	28
TABLE I.— Return of Diseases and Deaths .. .. .	28
APPENDIX I.— Medical Field Units Annual Report, 1948-49	30
APPENDIX II.— Preliminary Summary of annual report of the Laboratory Service for 1948 .. .. .	32



# Annual Report on the Medical Services for the Year 1948

## INTRODUCTION

Year after year there has to be recorded the gulf between our ambitions and our achievements, a gulf which serves to stimulate the Department rather than to depress it.

2. The main limiting factor in all our development plans has been shortage of Medical Officers particularly, and trained staff generally. Measures to overcome this shortage have been implemented by the extension of training facilities in Nigeria and improvement in Service conditions.

3. The country has an estimated population of 25 millions and an area four times the size of the British Isles. Its climate varies from the humid atmosphere of the coastal rain forest belt to the dry north on the fringe of the Sahara Desert. Its people consist of many tribes and races with differing languages and customs.

4. The Medical and Health requirements are still enormous as are the Medical and Health problems. Ravaging diseases, epidemic and endemic, continue to kill many thousands each year; worm infections are responsible for an enormous amount of ill-health; malaria, leprosy, tuberculosis and venereal disease affect wide areas of the country; in the face of all these and many other problems present hospital accommodation is inadequate.

5. The solution lies, of course, in preventive medicine and in raising the standard of living of the population. These are the objects for which we must strive and the targets to which all our plans must be directed.

## II.—ADMINISTRATION

### A. Staff

6. Decentralisation, started in 1947, continued during the year. There are now three Regional Deputy Directors of Medical Services who act as advisers to the Chief Commissioners and administer the Medical Services of their Regions on behalf of the Director of Medical Services. Control of finance has to a certain extent also passed to the Regions, but the process of regionalisation is impeded by the imperative necessity to control at Headquarters disposition of cadres—particularly Medical Officers—in extreme short supply and the persisting impossibility of devolving establishment matters.

7. Shortages of trained staff, particularly Medical Officers, continues to be one of the main factors limiting the Development Programme. The following figures refer only to trained staff :—

	Government		Native Adminis- tration	Mission and Private
	Approved Establish- ment	Actual Strength		
Doctors .. .. .	237	198	—	123
Dentists .. .. .	11	7	—	6
Nursing Sisters .. .. .	109	81	—	?
Sanitary Superintendents .. .. .	61	38	—	—
Pharmacists .. .. .	168	123	—	—
Nurses .. .. .	1,305	505	45	226
Midwives, Grade I .. .. .	153	128	—	83
Midwives, Grade II .. .. .	—	—	254	717
Sanitary Inspectors .. .. .	263	178	—	—

Native Administration :

Inspectors and Sub-Inspectors—Over 500  
 Dispensary Attendants .. —Over 500

The training of Medical Services Personnel is summarised in a later section of this Report.

### B. Legislation

The following legislation affecting Public Health was enacted during the year :—

#### (1) ORDINANCES—1948

Serial No.	Date	Short Title	Provisions	Gazette No.
22	2.9.48	The Medical Practitioners and Dentists (Amendment) Ordinance.	Empowering Regional Deputy Directors of Medical Services and Senior Medical Officer, Lagos, to issue Injection Licences.	46 of 2.9.48

#### (2) REGULATIONS

Serial No.	Date	Short Title	Provisions	Gazette No.
8	27.2.48	The Quarantine (Amendment) Regulations.	Amendment of 1947 Regulations	14 of 4.3.48
11	10.3.48	The Quarantine (Amendment) Regulations.	Amendment of 1947 Regulations.	18 of 18.3.48
14	30.4.48	The Labour Health Areas.	Labour Health Areas in the N.Ps.	27 of 6.5.48



## (3) ORDERS-IN-COUNCIL

<i>Serial No.</i>	<i>Date</i>	<i>Short Title</i>	<i>Provisions</i>	<i>Gazette No.</i>
4	16.1.48	The Births, Deaths and Burials (Amendment, Order in Council).	Re European Military Cemetery, Jos.	6 of 22.1.48
11	16.1.48	The Births, Deaths and Burials (Amendment, Order in Council).	Re U.S.A. Military Cemetery Ikoyi	27 of 6.5.48
21	6.48	The Public Health—Application Order in Council.	Application of Rules 1-25 in the Plateau Province.	33 of 10.6.48
22	18.6.48	The Building Lines (Amendment) Order in Council.	Amendment of Schedule to Order in Council No. 29 of 1940.	36 of 1.7.48
29	13.8.48	The Building Lines (Amendment No. 2). Order in Council	Insertion of Amendments to Order in Council No. 29 of 1940.	43 of 19.8.48
31	3.9.48	The Births, Deaths and Burials, Order in Council.	Re Christian Cemetery at Ilorin.	47 of 9.9.48
36	5.11.48	The Births, Deaths and Burials, Order in Council.	Re Christian Cemetery at Gusau	58 of 11.11.48
40	2.48	The Coroner's Ordinance (Application) (Amendment) Order in Council.	Deletion of certain Areas in the Northern Provinces in Schedule to Order in Council No. 14 of 1945.	63 of 9.12.48

## (4) RULES—1948

<i>Serial No.</i>	<i>Date</i>	<i>Short Title</i>	<i>Provisions</i>	<i>Gazette No.</i>
3	15.3.48	The Townships (Port Harcourt) Building Lines.	Rules made under the Township Ordinance in respect of Port Harcourt township.	25 of 22.4.48

**C. Finance**

Below are financial statements for the financial year 1947-48.

*Medical, Health and Laboratory Services, 1947-48.*

				£
Total Expenditure, 1946-47	..	..	..	826,077
Total Expenditure, 1947-48	..	..	..	1,090,291
<i>Increase</i>	..	..	..	264,214
<i>Sleeping Sickness Service.</i>				
Total Expenditure, 1946-47	..	..	..	20,442
Total Expenditure, 1947-48	..	..	..	52,522
<i>Increase</i>	..	..	..	32,080
<i>Leprosy Service.</i>				
Total Expenditure, 1946-47	..	..	..	51,664
Total Expenditure, 1947-48	..	..	..	52,061
<i>Increase</i>	..	..	..	397

### III.—PUBLIC HEALTH

#### A. Health of Expatriate Population

8. Malaria, as usual, was the main cause of morbidity amongst Europeans, accounting as it did for 21.3 per cent of all hospital in-patients. The overall figure for in-patients and out-patients was 10.6 per cent which represents a significant decrease on last year. Comparative figures for the last few years are as follows :—

		1944	1945	1946	1947	1948
In-patients rate	.. (Percentage)	27.5	25.8	18.9	26	21.3
				1946	1947	1948
Total rate	(Percentage) .. ..			10.2	13.6	10.6

Only two cases of black-water fever occurred in 1948. Both recovered. This figure is the lowest ever recorded.

9. General health has been very good. Apart from Malaria minor skin diseases, respiratory and intestinal disorders predominated. During the year, forty-six expatriate officers were invalided. Of these seventeen can be classified as psychosomatic.

10. The total number of expatriates in Nigeria at the end of the year was as follows :—

<i>Europeans</i>	<i>American</i>	<i>Other Non-Natives</i>	<i>Total</i>
8,399	719	2,412	11,530

Of these 2,900 were officials.

#### B. General Health

11. Government Hospital figures for the past four years are :—

		1945	1946	1947	1948
In-patients	..	106,083	116,429	121,316	136,928
Out-patients	..	886,449	1,002,244	1,067,029	1,232,822

12. The jump in attendance during the year is due partly to increased accommodation, but mainly to the increased popularity of the Medical Services.

13. Hospital and Dispensary Returns do not give a true picture of the prevalence of many of the commoner diseases. The morbidity due to many of these diseases can only be assessed by field surveys as has been done in several areas during the year

14. *Malaria*.—125,509 cases were treated in Government Hospitals and Dispensaries. This represents only a very small proportion of the true number of cases as the disease is universal.

15. *Leprosy*.—At a minimum estimate there are 400,000 lepers in Nigeria of whom 25 per cent are thought to be infective. About 90,000 lepers were treated during the year by the Government Leprosy Service, by Native Administrations and by Missions.

16. *Trypanosomiasis*.—In a series of surveys and re-surveys made during the year, 1,107,823 people were examined showing an infection rate varying from 2.4 per cent in a small group from Kabba to .05 per cent in the Cameroons. 13,575 cases were treated during the year.



17. *Intestinal Helminthic Diseases*.—82,398 cases were treated by Medical Officers during the year. *Ascaris* infection was most frequent though *Ankylostomiasis* was also very common. Field Surveys give infestation rates of well over 50 per cent in certain areas.

18. *Yaws*.—This disease is very prevalent particularly in the Eastern Provinces. In certain areas very nearly 100 per cent of the population is or has been infected.

19. *Venereal Diseases*.—18,179 cases of syphilis were seen and treated by Medical Officers. Most of these cases occurred in the Northern Provinces. By contrast a high proportion of the 35,838 cases of *Gonorrhoea* were seen in the South.

*Skin Diseases*.—238,318 cases were seen in Government Hospitals. Of this figure about half are ulcer cases. This broad group of skin conditions accounted for 20 per cent of all out-patients and over 10 per cent of in-patients.

20. *Rabies*.—Brains of twenty-seven dogs were found to be infected during the year. Of these thirteen were from Lagos where for several weeks dogs were controlled under the Dog's Ordinance and strays destroyed. Eight human cases were notified during the year.

21. *Tuberculosis*.—2,303 pulmonary cases were seen in hospitals during the year. This does not give a true picture of the incidence of the disease which can be better gauged by the Lagos mortality figures. In Lagos 7.46 per cent of all deaths were attributed to *Tuberculosis*.

#### IV.—VITAL STATISTICS

22. In Lagos and in certain of the larger towns, registration of births and deaths has been compulsory for several years. More recently, Native Administrations throughout the country have shown interest in the recording of vital statistics and a start has been made, mostly on a voluntary basis, in several centres. The most ambitious scheme started during the year under review was for registration of births and deaths for the whole of Katsina Province.

23. Preliminary figures indicate that the local population is co-operating fully in this project.

As Lagos figures are the most accurate, comparative figures for the years 1946, 1947 and 1948 are given :—

	1946	1947	1948
Population .. .. .	176,500	178,700	180,800
Births Registered .. ..	8,060	8,678	9,237
Birth Rate .. .. .	46	48.5	51
Deaths Registered .. ..	3,362	3,905	3,371
Infant Mortality Rate ..	109.7	125.6	105.5
Still Birth Rate per 1,000..	35	39	32

#### V.—HYGIENE AND SANITATION

##### A. Preventive Measures

##### (1) INSECT-BORNE DISEASES

##### 25. (a) *Malaria*.

The Senior Malariologist writes as follows :—

“ The Lagos Swamp Drainage and Reclamation Scheme was completed by the end of 1947, put on the maintenance basis in January, 1948, and handed over by the late Malaria Unit to the Lagos Town Council on 1st April, 1948.



“ The final figures with reference to this scheme are as follows :—

Total reclaimed area : 4195 acres

Length of bund : 20.7 miles

Length of channels : 130.4 miles

Number of sluice-gates : 21 (of which four are double and one quadruple).

“ The urban district of Lagos has an area of 24 square miles of which about 5.5 square miles are tidal mangrove swamps and another 2 square miles are fresh-water swamps merging with peripheral parts of the tidal marshes. The main object of the reclamation scheme was to control the breeding activity of *A. gambiae melas*. This particular anopheles was irregularly distributed over a wide area of coastal swamps, covered with a dense tangle of mangroves and coarse swamp grass : a condition that precluded an effective application of larvicides. The original ideas of the reclamation scheme was to drain the large, shallow coastal swamps and at the same time to confine the inaccessible stagnant water in regular channels where larvicidal methods would easily be applied. However, it was found that only a minimal amount of larvicidal measures was necessary since the anopheline breeding in channels was negligible. This is due to the fact that the Lagos drainage scheme not only removes the stagnant water from the coastal swampy areas, but at the same time acts as a self-operating naturalistic control, limiting to a very considerable extent the amount of *A. gambiae melas* likely to breed in channels. This naturalistic control is based on three facts :

- (i) Flowing water in the channels deters gravid anopheline females from ovipositing.
- (ii) Changing level of water, observed twice daily at the opening of the sluice gate, strands any mosquito larvae on the sides of the drains.
- (iii) Most of the drains abound in small surface-breeding fish, of which three species are very effective predators of larvae and pupae. The average number of anopheline breeding foci per mile of drain was 2.8, but most the larvae were found in peripheral contour drains or in subsidiary drains chiefly during the dry season combined with unfavourable tides, when the free flow of water is slowed down and where the larvivorous fish find no access. During this period the peripheral drains were treated with Paris green dust.

“ Part of the reclaimed area was used for experimental afforestation which proved very successful, particularly with regard to Casuarinas and Melaleuca leukodendron.

“ Control of the fresh water breeding *A. gambiae gambiae* was carried out by larvicidal methods based on a division of the whole remaining township area in 35 zones, each of which had a permanent team dealing with the respective zone in six days at the rate of one sector per day. Larvicidal oil alone or with an addition of 0.2 per cent DDT was used as a routine. Paris green was used only in selected places.

“ The value of the reclamation scheme as a method of land reclamation and species sanitation (the latter applied mainly against the salt water breeding *A. gambiae melas*) can best be judged by the example of Apapa where in 1943 the Average Anopheles Density (females) was between 12.0 and 28.5 per Capture Station room per day, while in 1948 it averaged 0.9.



“ In other areas the Adult Anopheline Densities varied according to their distance from undrained areas under sand-pumping reclamation, which always causes a considerable though not permanent amount of water logging and thus is conducive to increased mosquito breeding. The average annual Anopheles Density for the whole township area was 1.3 per Capture Station room/day with highest figures at Victoria and Eleshin of 12.5, during three weeks in June. The respective annual figure for Ikoyi was 0.56 with a short peak of 2.5 during two weeks in June.

“ The bulk of collected anophelines consisted of *A.gambiae* group. *A.gambiae melas* was limited to unreclaimed coastal areas. *A.gambiae gambiae* predominated in peripheral inland areas of the township. Some 1.5 per cent of all anophelines collected were identified as *A.hargreavesi*, *A.funestus*, *A.coustani*, *A.pharoensis*, *A.squamosus*, *A.obscurus*.

“ The average annual infectivity rate of the *A.gambiae* group was 2.9 per cent.

“ On the 1st April, 1948, the maintenance of the Lagos Swamp Drainage and Reclamation Scheme was taken over by the Lagos Town Council and from that date directed by the Medical Officer of Health. The change over went into operation with no break of maintenance and control measures. The laboratory of the late Malaria Unit (a nucleus of the future Malaria Service) continued to carry out the routine work, providing information with regard to the anopheline and culicine density, identifications and infectivity.

“ The larvicidal control routine organized by the late Malaria Unit remained unchanged and was directed by the Medical Officer of Health, Lagos.

“ A survey of Kumba, Mamfe and Bamenda in the British Cameroons carried out in October revealed that the first two areas hyperendemic with spleen rates in children (1-10 years) of 66.0 per cent and 65.0 per cent respectively and parasite rates of 79.0 per cent and 77.0 per cent. Bamenda in spite of its altitude (4,500 feet) has a fair amount of malaria the spleen rate in children in towns at the hill-foot of the escarpment being 44.0 per cent and the parasite rate 62.0 per cent. *A.gambiae* was found breeding freely in man made excavations.

“ An investigation of the problem of filariasis was carried out in Kumba and Mamfe. *Microfilaria loa* and/or *Acanthocheilonema perstans* were found in the peripheral blood of 23.5 per cent of children and in the blood of 71.0 of adults in Kumba. Respective figures for Mamfe are 20.5 per cent and 75.0 per cent.

“ Dissections of specimens of *Chrysops silacea*, the main carrier of *Microfilaria loa*, gave an infectivity rate of 6.3 per cent. Pupae of this species were found at the edge of a stream.

“ An investigation was carried out of the differential infection of mature and immature red blood cells by *P.falciparum* and *P.malariae* in African Children. This investigation has revealed that *P.falciparum* invades immature red cells about as often as mature cells, while *P.malariae* has a definite predilection for mature red blood cells. It was also found that untreated malaria in African children produces a prolonged reticulocyte response the degree of which is related to the parasite density.

“ A new species of *Aedes* (*Aedimorphus*) *boneti* ssp. *Kumbae* was found in Kumba in the Cameroons. The larva of this species has a very unusual morphology. This mosquito is related to a similar species reported from Fernando Po.”



(b) *Sleeping Sickness*

26. The Senior Medical Officer, in charge Sleeping Sickness Service who was also in charge of Medical Field Units for the most of the year writes the report as follows :—

“ All six medical duty posts, three for medical officers and three for Superintendents with medical training, were filled throughout the year. These officers assisted much in the training and supervising of the Field Units, which were administered by the Sleeping Sickness Service for three-quarters of the year, and in serious outbreaks of meningitis or relapsing fever in Kano, Katsina, Sokoto, Plateau and Bauchi Provinces. Tsetse control staff increased to ten, all of whom were on duty for some part of the year, but there are still several posts unfilled, including one for an entomologist. A second experienced S.S.M.O. is to transfer to the West African Institute for Trypanosomiasis Research. In return the Institute for Trypanosomiasis Research will now undertake all drug trials, for which it will be able to guarantee greater continuity. The Institute has also taken over the remaining buildings at the old Gadau Headquarters of the Sleeping Sickness Service.

“ More than a million people were examined in the field. 11,230 cases of Trypanosomiasis were treated by staff of the Sleeping Sickness Service, 3,860 in the field, thirty-six in mining camps and 7,334 at dispensaries. A further 2,345 cases were treated at Government and Mission Hospitals, making a total of 13,575 cases for the year.

“ In Kano, Plateau, Benue, Ogoja and Cameroons Provinces, a number of Districts were surveyed for the first time. The index of new infections in the 319,437 people examined was 0.17 per cent (546 cases). It varied from 0.02 per cent in the Wase District of Shendam, Plateau Province, to 1.7 per cent in the Ogoja Division, Eastern Region. The three Kano Districts examined, Gaya, Dawaki ta Kudu and Gwarzo, are partly tsetse free and had a low infection rate, 0.1 per cent.

“ From the findings in Wase, in Idoma (Benue Province) and in the Victoria, Mamfe and Bamenda Divisions of Cameroons Province, which are all tsetse-infested, there is as yet no evidence of serious extension from the central endemic area, although this is to be expected following the development and opening up of outlying Provinces. The numbers examined in the Cameroons were however not great and it is known that foci exist in Mamfe Division.

“ At re-surveys done by teams within the known endemic area the index of new infections was 0.65 per cent, 3,314 cases in 511,136 people. This is a higher figure than in 1947 (0.5 per cent) but lower than in 1946 (0.98 per cent) or previous years. Low incidence, from 0.1 to 0.4 per cent was reported from Kano, Zaria, Niger, Benue and Rivers (Owerri) Provinces, but rates around unity occurred in Katsina, Plateau, Bauchi and Ogoja. The Katsina District of Yandaka had in 1947 an overall infection rate of 1 per cent but there were pockets of high incidence, up to 40 per cent in riverine villages. These riverine villages were re-surveyed twice in 1948, the findings being :—

<i>Date</i>	<i>No. Examined</i>	<i>New S.S. Cases</i>	<i>Per Cent</i>
1947 .. ..	2,920	122	4.2
1948 March .. ..	5,696	78	1.4
1948 October .. ..	5,451	7	0.1



“ Reports from the Dispensary in the Galadima District of Katsina indicated persisting infection in some villages. Preliminary investigation revealed increases in incidence since the 1945-46 re-surveys, and that much infection probably arose from infested streams near farmlands. The tax census was not too reliable but did give some evidence of depopulation. In the worst villages a special census was made and mass survey was repeated two or three times to ensure the examination of the migrant part of the population. The higher infection rates were found to be almost restricted to five village areas in which ten hamlets had indices between five and twenty per cent.

“ The final returns were :—

		<i>Census</i>	<i>Examined</i>	<i>New S.S. Cases</i>	<i>Per Cent</i>
5 Village areas	.. ..	14,408	13,941	612	4.4
Remainder of District	.. ..	68,077	66,478	202	0.3
		<hr/> 82,485	<hr/> 80,419	<hr/> 814	<hr/> 1.0
1945-46 Survey	.. ..	83,994	70,658	2,004	2.8

“ Plateau Province infection rates were low (0.3 per cent) in the Southern Division, but remain around unity in the Kwall, Miango and Rukuba areas of Jos Division, in Shendam Division which was completely surveyed, and also in the small area of Pankshin which was re-examined. The incidence in Rukuba (0.9 per cent) is regarded as satisfactory since the depopulation that was occurring in recent years has ceased and cases are now receiving more regular treatment at an earlier stage of the disease. In Shendam, apart from Wase which had its first survey, 87,000 people were re-examined and 892 cases (1.02 per cent) diagnosed.

“ Lame District in the west of Bauchi Province had moderate infection rates (0.6 per cent to 4.0 per cent) at the 1938-39 primary survey of its more populated western half near the Plateau border. At the 1948 re-survey of this part of the District 506 cases (1.5 per cent) were found in 33,737 people. The incidence in mining camps (2,925 people 107 cases ; 3.7 per cent) was higher than among peasants. In general the incidence in villages was greatest in those near mining camps, and the two highest indices were recorded from a mining camp (16 per cent) and its neighbouring village (10 per cent).

“ In these re-surveys, at which half a million people were seen, attendances were as a rule very good in the Northern Provinces, even in Districts where there was considerable opposition to primary surveys or re-surveys ten years ago. The system of using small teams of African staff not under constant supervision has obvious defects. It is not ideal for obtaining really accurate results in areas of high incidence but is well suited to the present position where, in general, low rates are encountered over a very wide area substantial parts of which were not visited during the war years.

“ The net must be widely cast, yet it must be possible to concentrate staff in any resistant focus, as in Katsina. In only one team, which had for a time very scant supervision, did junior staff take advantage and exact tribute either from credulous peasants or from the more sophisticated who so avidly desire wonder-working injections or tablets. Apart from Kano Emirate, which did have five dispensaries functioning between 1935 and 1940 and where



much clearance has been done, the lower indices tend to be in Provinces (Zaria, Niger, Benue) where there is a reasonable or excellent distribution of special staff at dispensaries and where re-surveys have been frequent ; and the higher indices (Katsina, Shendam, Bauchi) occur where dispensary facilities are nil, recently established or less than in neighbouring areas.

“ With more supervision and encouragement, particularly in Zaria and Benue Provinces, dispensary staff went more regularly on tour to re-examine villages in their area. Some of the reports of such surveys (264,525 examined ; 1,828 new cases ; 0.69 per cent) are not individually of high accuracy as regards the attendances reported. There is much more certainty regarding the diagnosis of cases, many of which are seen by senior officers. The value of these re-surveys lies in the facts that 1,800 relatively early cases were diagnosed in their homes and brought to treatment sooner than they would have sought it voluntarily, and that a guard is maintained against recrudescence in villages not visited by the mobile teams. Because of the tendency to slight exaggeration in attendance figures, the true infection rate is somewhat higher than that recorded (0.69 per cent). The steady fall by a thousand each year since 1945 in the total of dispensary cases may be partly due to the larger numbers of early infections uncovered at the re-surveys done by teams and by dispensary staff.

“ Dispensaries in the Northern Provinces now differentiate between new infections and relapses, their returns showing for 1948 :—

New Infections	..	..	..	..	..	5,590
Relapses	..	..	..	..	..	1,367
						<hr/> 6,957 <hr/>

“ That is, one fifth of all cases treated at dispensaries are relapses. Approximately 9,000 new infections were treated in 1947 by both field and dispensary staff in the areas served by the dispensaries. If one assumes that all the 1948 relapses had their initial course of treatment in 1947, and that most relapsing cases seek treatment, which is the case, the relapse rate, 1,367 in 9,000 new infections treated, is about 15 per cent.

### **Restricted Mining Areas**

“ In the two principal areas, the Wamba and Jemaa Divisions of Plateau Province, the labourers, averaging 3,500 in number, are now given regular pentamidine prophylaxis on engagement and thereafter at regular intervals of four to five months. The fourteen new infections diagnosed in these areas all occurred in men who had not had pentamidine. In May-June 1948, 3,243 men, practically the whole labour force, were carefully examined. Lumbar puncture was done on 105 of them who gave a history of headache, somnolence, weakness or vague ill-health, or who were suspect for some reason. Two had abnormal spinal fluids presumed to be due to cryptic infection following prophylaxis. In 1945 when pentamidine was used in a few camps only, there were 170 new infections in the Wamba-Jemaa area ; in 1946 and 1947 as the prophylactic was used in more and more camps new infections fell to 161 and eighty-five respectively ; this year there have been fourteen new infections prior to pentamidinization and two cryptic infections. The labour force has been between 3,500 and 4,000 throughout this period.



“ In the other two restricted areas, Kabba-Ilorin and Niger, there has been a drop in the numbers at risk and cases are fewer, especially in Niger where pentamidine is used at a number of small camps.

### **Tsetse Control Section**

“ Control staff were posted to Kano, Katsina, Zaria, Plateau and Benue Provinces. The Entomologist, stationed latterly at Jos, supervised or arranged various investigations in Plateau, Zaria and Kano, and visited Niger and Katsina Provinces.

“ Much effort was devoted to practical training of junior staff, to the surveying of new areas, and to the inspection of large numbers of old clearings, most of which were found to be well maintained.

“ In the Pankshin and Shendam Divisions of Plateau Province 389 sacred groves and five miles of stream were cleared (Montol, Piapum, Kanam and Doka Districts); 400 groves were marked for future attention (Tal, Chip and Mirriam Districts); forty-six stream crossings were planned on several trade-routes; and clearings were begun in the Shendam re-settlement area.

“ In addition to inspections and reslashing in six districts, the Kano control officer made forty-six new clearings, totalling nineteen miles, in Sumaila and in Birnin Kudu, planned clearings throughout the latter District, and planned eradivative work in Southern Tudun Wada to link this area to the Anchau corridor. The Yandaka, Dan Ja and Galadima Districts of Katsina required eighteen new clearings and minor extensions totalling nineteen miles. In three village areas of Galadima District which had persistent high infection rates 130 square miles of country were mapped and fly-surveyed in preparation for a programme of eradivative clearance which is being introduced to replace purely protective measures.

“ A control officer was posted for the first time to the Tiv Division of Benue Province in June. Approximately 400 square miles of the central part of the Division have been surveyed for fly and forty square miles mapped in detail. *Glossina palpalis* is numerous and *G. tachinoides* scanty. The dense population occupies large scattered households many of which are very close to infested streams. Eradivative clearance is planned to spread out from the central watersheds around Gboko, beginning with the lands occupied by Gboko town, the Leper Settlement and the Yandev Agricultural station.

“ Wet-season inspections were made of 125 blocks of clearings within the Anchau corridor and of nearly 700 protective clearings in other parts of Zaria. Barriers in the corridor were found to be fully effective. Within the corridor eighteen miles of partial and five miles of barrier clearance were made south of Anchau to connect with similar work planned in Tudun Wada, Kano. Outside the corridor thirty-eight miles of protective clearing were made in the Kubau part of Anchau, and 400 square miles of Lere District, on the Plateau border, were roughly mapped and fly-surveyed preparatory to introducing eradivative measures in this predominantly palpalis area. In the Chikum District, south of Kaduna, fifty miles of stream near Kujama were surveyed and riverine vegetation listed prior to experimental clearance on the Gold Coast selective system.

### **Anchau Tsetse-free Corridor**

“ In addition to the inspections and to the extensions to the cleared area which have either been made or are planned, propaganda was maintained regarding



upkeep of village and agricultural improvements. Signs of continuing economic development are evident in the ease with which increased taxes are paid without the need to sell staple crops and with which capital is produced to purchase cattle ; in the hundreds of cycles where there were only a few ten years ago ; in the trebling of the number of sewing machines ; in the purchase of cigarettes and other former luxuries. This economic development is on a sound basis with improving health and diet for the farmer, a diversity of crops and an increase in livestock. There are now eighty mixed farmers where there was one in 1937. Many others now have livestock if, as yet, no plough. Sugar crushers have increased from one to forty-two, and the production of cane has gone up correspondingly. The amount of cotton grown is also increasing. Village pig-keepers sold 450 weaner pigs for fattening, rather fewer than last year, but receipts increased to £600. During the rains a further 1,300 fruit trees were planted in villages, over 500 of them oranges, the remainder guava, pawpaw and mango. Attendances remained fairly good at the village schools, except in the dry season, and twenty pupils passed out in March. The animal clinic continues to do excellent work and the annual immunization camp is well attended although Fulani are still reluctant to settle in the area. During the rains all the wells in the Anchau section of the corridor we inspected and necessary repairs effected ; one village well was deepened and erone market well and its surrounds improved.

### Drug Trials

“ The Katsina cases on Melarsen and Melarsen Oxide, with controls on other drugs, were followed up. The final examination is due in 1949 when results will be published. During the year small supplies of Mel B, a combination of a drug in this series with B.A.L., were received and trials begun in advanced cases. Preliminary work has shown this compound to have the same high trypanocidal activity as its precursors allied to a rapid effect on abnormal spinal fluids but three patients in the first small group developed a mild to severe maniacal state which seemed to be due solely to the action of the drug. The officer supervising these trials worked also on intensive one-day or two-day courses of treatment for Yaws and Schistosomiasis on behalf of the Field Units.”

#### CASES OF TRYPANOSOMIASIS TREATED IN NIGERIA

			1945	1946	1947	1948
New Surveys .. ..	..	..	624	—	543	546
Re-Surveys .. ..	..	..	1,174	3,503	3,020	3,314
Dispensaries .. ..	..	..	10,126	9,707	8,191	7,334
Mines Labour .. ..	..	..	293	227	140	36
Hospitals } .. ..	..	..	3,107	3,286	1,532	1,221
Missions } .. ..	..	..	—	—	1,048	1,099
			15,324	16,723	14,474	13,575

#### TOTAL EXAMINATIONS MADE IN 1948

Surveys .. .. .	..	..	..	..	..	..	319,437
Re-Surveys .. ..	..	..	..	..	..	..	511,136
Disp. Re-surveys ..	..	..	..	..	..	..	264,525
							1,107,823



NEW SURVEYS							
<i>Northern Region</i>					<i>No.</i>	<i>S.S.</i>	<i>Infection</i>
					<i>Examined</i>	<i>Cases</i>	<i>Per Cent</i>
Kano	..	..	..	..	202,108	236	0.1
Plateau	..	..	..	..	47,133	65	0.1
Benue	..	..	..	..	35,215	140	0.3
Total					284,456	441	0.15
<i>Eastern Region</i>							
Ogoja	..	..	..	..	5,153	90	1.7
Cameroons	..	..	..	..	29,828	15	0.05
Total					34,981	105	0.30
Total, Nigeria					319,437	546	0.17

TEAM RE-SURVEYS							
<i>Northern Region</i>					<i>No.</i>	<i>S.S.</i>	<i>Infection</i>
					<i>Examined</i>	<i>Cases</i>	<i>Per Cent</i>
Kano	..	..	..	..	54,172	56	0.1
Katsina	..	..	..	..	99,864	904	0.9
Zaria	..	..	..	..	41,995	104	0.2
Niger	..	..	..	..	22,981	42	0.2
Plateau	..	..	..	..	129,793	1,176	0.9
Bauchi	..	..	..	..	59,627	621	1.0
Benue	..	..	..	..	91,351	350	0.4
Total					499,783	3,253	0.65
<i>Eastern Region</i>							
Ogoja	..	..	..	..	7,871	59	0.7
Rivers	..	..	..	..	3,482	2	0.1
Total					11,535	61	0.53
Total, Nigeria					511,136	3,314	0.65

DISPENSARY RE-SURVEYS							
<i>Northern Region</i>					<i>No.</i>	<i>S.S.</i>	<i>Infection</i>
					<i>Examined</i>	<i>Cases</i>	<i>Per Cent</i>
Kano	..	..	..	..	10,306	107	1.0
Bornu	..	..	..	..	4,732	27	0.6
Zaria	..	..	..	..	85,878	552	0.6
Niger	..	..	..	..	1,760	23	1.3
Plateau	..	..	..	..	7,482	51	0.7
Bauchi	..	..	..	..	10,930	126	1.1
Benue	..	..	..	..	126,647	836	0.7
Total					247,735	1,722	0.69

					<i>No. Examined</i>	<i>S.S. Cases</i>	<i>Infection Per Cent</i>
<i>Eastern Region</i>							
Ogoja .. .. .	..	..	..	..	16,504	100	0.6
Cameroons .. .. .	..	..	..	..	286	6	2.1
Total .. .. .					16,790	106	0.63
Total, Nigeria .. .. .					264,525	1,828	0.69

#### MINES LABOUR

					<i>No. of Examinations</i>	<i>S.S. Cases</i>	<i>Infection Per Cent</i>
Kabba .. .. .	..	..	..	..	806	19	2.4
Niger .. .. .	..	..	..	..	763	3	0.4
Wamba (Plateau) .. .. .	..	..	..	..	7,736	10	0.1
Jama'a .. .. .	..	..	..	..	3,420	4	0.1
Total .. .. .					12,725	36	0.3

#### DISTRIBUTION OF ALL CASES OF TRYPANOSOMIASIS.

				<i>Surveys</i>	<i>Mines</i>	<i>Dispen- saries</i>	<i>Hospitals</i>	<i>Missions</i>	<i>Totals</i>
<i>Northern Region</i>									
Kano .. .. .	..	..	..	292	—	299	400	—	991
Katsina .. .. .	..	..	..	904	—	348	—	—	1,252
Bornu .. .. .	..	..	..	—	—	66	—	—	66
Sokoto .. .. .	..	..	..	—	—	—	—	—	—
Zaria .. .. .	..	..	..	104	—	1,606	20	56	1,786
Niger .. .. .	..	..	..	42	3	234	188	—	467
Plateau .. .. .	..	..	..	1,241	14	1,329	302	425	3,311
Bauchi .. .. .	..	..	..	621	—	545	146	—	1,312
Adamawa .. .. .	..	..	..	—	—	—	—	24	24
Benue .. .. .	..	..	..	490	—	2,530	162	594	3,776
Kabba .. .. .	..	..	..	—	19	—	1	—	20
Ilorin .. .. .	..	..	..	—	—	—	2	—	2
Total .. .. .				3,694	36	6,957	1,221	1,099	13,007
<i>Eastern Region</i>									
Ogoja .. .. .	..	..	..	149	—	338	4	—	491
Rivers .. .. .	..	..	..	2	—	17	—	—	19
Cameroons .. .. .	..	..	..	15	—	22	21	—	58
Total .. .. .				166	—	377	25	—	568
Total, Nigeria .. .. .				3,860	36	7,334	1,246	1,099	13,575



## (2) EPIDEMIC AND ENDEMIC DISEASES

### (a) *Relapsing Fever.*

27. After World War I, Nigeria was one of the countries to suffer a considerable epidemic of louse born of relapsing fever. This epidemic spread from French West Africa on the West and North and from 1923 for a number of years, this disease was prevalent in Nigeria causing many deaths. It died out after a few years but in 1943, during the war in North Africa, a large outbreak of Relapsing Fever occurred in Tunisia, Algeria and Morocco lasting for 2 years: it has now spread into Nigeria. In July 1947, the disease became epidemic in the Plateau Province and has continued through 1948. Moreover a large epidemic affecting Katsina Province has been taxing resources during the year, and the disease had become established in the whole of the Northern half of the Northern Provinces.

Total cases reported in 1947=832 with 35 deaths.

Total cases reported in 1948=3,796 with 179 deaths.

Of these, distribution of cases was as follows :—

							<i>Cases</i>	<i>Deaths</i>
Plateau	..	..	..	..	..	..	1,842	114
Katsina	..	..	..	..	..	..	1,336	51
Sokoto	..	..	..	..	..	..	199	4
Bornu	..	..	..	..	..	..	170	2
Kano	..	..	..	..	..	..	113	3
Bauchi	..	..	..	..	..	..	83	5
Zaria	..	..	..	..	..	..	51	—
Benue	..	..	..	..	..	..	2	—

28. An increased amount of work and expenditure of material has been put into the task of controlling the spread of this disease and in treating cases. An overall mortality figure of 4.7 per cent speaks for itself. In Katsina Province control measures were so effective that during May and June very few cases were found but the advent of the colder weather during the heavier rains started a recrudescence which continued to the end of the year on the Plateau, owing to the very dispersed nature of the disease the scattered nature of hamlets, and to the suspicious nature of the Pagan population, case incidence remained high until the last two months of the year when a considerable drop in notifications occurred. The assistance of Epidemic Field Unit Orderlies both in Katsina and in Plateau Province proved invaluable. Although cases are still occurring, it can be said that the epidemics of this disease in the two main affected areas are slowly but surely being extinguished.

### (b) *Cerebro Spinal Fever.*

29. Cerebro Spinal Meningitis, which is always to be expected in the North during the cold dry season, broke out in a particularly virulent form in Katsina Province early in the year and extended into the Western part of the adjoining Province of Kano. Bauchi and Sokoto Provinces also had small outbreaks in localised areas, while sporadic cases were reported from practically all Medical areas of the North.

30. Total cases reported in the Northern Provinces during the year were as follows :—

					<i>Cases</i>	<i>Deaths</i>	<i>Mortality Rate</i>
1947	..	..	..	..	901	262	29 per cent
1948	..	..	..	..	8,429	1,689	20 per cent

Case distribution was as follows :—

						<i>Cases</i>	<i>Deaths</i>
Adamawa .. .. .	..	..	..	..	..	11	2
Bauchi .. .. .	..	..	..	..	..	279	47
Benue .. .. .	..	..	..	..	..	123	21
Bornu .. .. .	..	..	..	..	..	7	6
Ilorin.. .. .	..	..	..	..	..	5	1
Katsina .. .. .	..	..	..	..	..	6,751	904
Kabba .. .. .	..	..	..	..	..	7	3
Kano.. .. .	..	..	..	..	..	789	611
Niger.. .. .	..	..	..	..	..	57	7
Plateau .. .. .	..	..	..	..	..	71	23
Sokoto .. .. .	..	..	..	..	..	309	56
Zaria.. .. .	..	..	..	..	..	20	8

31. For the first four and half months of 1948 Cerebro Spinal Fever was severe and widespread in Katsina Province and reached its peak from the second week in March to the week ending 17th April. At its height in early April over 950 cases were reported during a single week but the epidemic very rapidly subsided after the first showers of rain. The following table shows the incidence during the worst months in Katsina Province.

						<i>Cases</i>	<i>Deaths</i>
January .. .. .	..	..	..	..	..	149	32
February .. .. .	..	..	..	..	..	550	116
March .. .. .	..	..	..	..	..	2,591	336
April .. .. .	..	..	..	..	..	3,214	372
May .. .. .	..	..	..	..	..	73	7
June .. .. .	..	..	..	..	..	1	—
						6,578	863

32. Practically the entire staff of the Medical and Health Services of the Province were mobilised to deal with the epidemic. A Sleeping Sickness Team was also seconded to do full time work and a draft of Field Unit Orderlies was sent from Makurdi to assist. The Sudan Interior Mission at Katazu with two Lady Missionaries gave valuable co-operation. In addition, District Heads, Village Heads and Scribes of the Native Administration gave excellent assistance. The death rate of just over 13 per cent shows that treatment was most effective and speaks highly of the great work done by the Medical Department in the Province, especially when it is borne in mind that 41 per cent of the cases occurred in the age group one to five years, and 77 per cent of cases occurred in the age group under sixteen.

33. The disease in Kano Province was of a particularly fulminating type and deaths took place in twelve to forty-eight hours. The local people did not recognise it so there was at first a lack of reports as to the existence of Cerebro Spinal Meningitis and even denials that the disease was prevalent. It was not until well on in March when Gwarzo District reported 530 deaths (which information was the result of warnings sent to all village heads in the district) that the situation became clear and proper action could be instituted to deal with the epidemic. This state of affairs is reflected in the mortality figures for Kano Province.



34. The most effective treatment in the Epidemic was found to be intravenous solupyridine plus standard intramuscular sulphapyridine suspension and oral suspension for less severe cases. Experience has shown that in large epidemics of Cerebro Spinal Meningitis, if there is :—

- (a) constant supervision
- (b) first class co-operation of District and Village Heads
- (c) keen Native Administration Scribes
- (d) a big medical and health staff
- (e) good communications and adequate transport, mortality rate should not exceed 7—10 per cent.

(c) *Small-pox.*

35. Total cases for the year were 5,746 as against 5,161 in 1947. Once again this disease took a heavy toll, a total of 841 deaths. Propaganda, exhortation and persuasion seem to have little effect on making the population vaccination conscious. Field Unit Surveys in several areas in the North have shown that under 50 per cent of the population is protected. This figure is probably true for the whole of the Northern Provinces.

36. There was a large increase in cases in the Eastern Region where 1,749 cases were reported. This epidemic started in the Eastern Ijaw area and by the end of the year had spread to Onitsha and Owerri. To combat this one of the largest vaccination campaigns ever undertaken in the Eastern Region was instituted in the Eastern Ijaw Area with marked success. Control was very satisfactory in the towns but not so efficient in the rural areas. Road blocks were established to prevent the disease spreading to Enugu and the North.

37. In the Western Provinces a sharp outbreak occurred towards the end of the year in the Benin—Warri Area. Concealment of and refusal to isolate cases together with apathy and even hostility to vaccination on the part of the population greatly impeded the work of the Health Staff in dealing with the outbreak.

(d) *Leprosy.*

38. Nigeria's estimated 400,000 lepers are cared for by the Central Government through the Nigeria Leprosy Service, by the British Empire Leprosy Relief Association, by Missions, by Native Administration or by a combination of two or more of these.

39. The Nigeria Leprosy Service was started in 1945 with the help of Colonial Development and Welfare Funds, being restricted to Eastern and Western Regions for an experimental period of five years with the intention of extending the service from 1950 to cover the whole of Nigeria.

40. During the past four years the Leprosy Programme has been hampered mainly by shortage of staff and of building materials. However in spite of these shortages considerable progress has been made and of the six control settlements aimed at for Southern Nigeria, four have been completed and one is in process of erection.

41. Though much of the work in the Southern Provinces done in the past by Missions has now passed into the hands of the Leprosy Service much is still being done by these Missions. The Church of Scotland Mission at Itu and the American Baptist Mission at Ogbomosho are striking examples. In the North most Leprosy work is still



done by missions of which the Sudan Interior Mission and the Sudan United Mission are noteworthy. At the end of the year in the whole of Nigeria there were over 90,000 lepers under treatment of which, 36,830 were under the care of the Leprosy Service. A small research unit was established by the British Empire Leprosy Relief Association in 1947 and in January, 1948 started work at Uzuakoli. This Unit, working on the chemotherapy of Leprosy has been studying the effects of the Sulphone group on strictly controlled series of patients. The results obtained have been most encouraging and augur well for the future.

(e) *Yellow Fever.*

42. No cases were recorded during the year. The Yellow Fever Research Institute continued its investigation into a type of vaccine material suitable for scratch inoculation. Seventeen D.virus was grown on chick embryos and has been highly successful in early fields trials. Research is at the moment proceeding into the production of a combined Yellow Fever and Small Pox Vaccine suitable for Field use on a large scale.

(f) *Venereal Disease.*

43. Gonorrhoea and Syphilis accounted for 2.62 per cent and 1.33 per cent of all cases treated in Government Hospitals and Dispensaries. These figures do not represent the true incidence of these diseases which are certainly much higher. The greater availability of Penicillin during the year and the use of massive Mapharside Therapy have greatly improved the rate of cure in these diseases and will no doubt, in time, lead to a considerable reduction in their prevalence.

### (3) HELMINTHIC DISEASES

(a) *Ankylostomiasis.*

44. During the year 6,102 cases received treatment in Government Hospitals and Dispensaries. This figure gives no indication of the true incidence of the disease. Surveys carried out during the year by Medical Field Units show an incidence in some parts, as high as 50 per cent. No attempt has yet been made to assess the worm burden of those affected.

(b) *Schistosomiasis.*

45. This is particularly common in Adamawa Province and Plateau Province in Northern Nigeria. *Schistosoma haematobium* and *Schistosoma mansoni* are both found, though the former is much the more common. Foci are found scattered widely through other Regions. In some areas it is known locally as "dog gonorrhoea" to the detriment of the prophylaxis and treatment. 2,817 cases were treated during the year. A "one day treatment" routine was instituted in the Plateau area with marked success. This consists of the intravenous administration of sodium antimony tartrate to a total dosage of 1 grain per 20 lbs body weight.

(c) *Guineaworm.*

46. This is also a disease found mainly in the Northern Regions. In certain areas it is probably the main cause of morbidity, interfering, as it does, with the work of the adult male population and the economic life of the community. Much progress has been made in the prevention of the disease by the introduction of wells and the control of watering places. In certain areas the disease has almost disappeared within a year by these methods. 2,775 cases were treated in Hospitals during the year,



(d) *Onchocerciasis*.

47. This disease is one of mainly local significance. Though in some localised areas the infestation rate is estimated to be as high as 50 per cent in extensive parts of the country it is virtually unknown. The disease differs greatly from that encountered in Central America by the comparative infrequency of its association with eye symptoms. It is not considered to be an appreciable cause of blindness in Nigeria.

(e) *Filariasis*.

48. *Loa loa* and *Filaria perstans* are extremely common, particularly in the Cameroons. In one survey, up to 90 per cent infection was found. Though most of this is symptom free, Calabar swellings are common, particularly in European residents in endemic areas. *Chrysops silacea* is apparently the chief vector, but naturalistic control of its probable breeding places, by removal of densely overgrown stream banks, presents a serious problem by creating conditions favourable for the chief malarial vector, *anopheles gambiae*.

## B. General Measures of Sanitation

### (1) WATER SUPPLY

(a) *Urban*.

49. A considerable proportion of Nigeria's estimated population of 25,000,000 live in towns of various sizes. The supply of these towns includes fifteen Government and thirteen Native Administration piped water supplies. Under the Development Programme several schemes are in hand for the extension of these services and for the provision of further ones.

(b) *Rural*.

50. The provision of wells and small dams for the impounding of surface water has proceeded, chiefly in the Northern and Eastern Provinces. Native Administrations, Missions, Schools and private persons have during the year erected a large number of wells, sited and approved by Government or Native Administration Inspectorate. An attempt is being made in the Northern Provinces to introduce Windmills for the pumping of local water supplies.

### (2) SEWAGE DISPOSAL

51. With the exception of two small systems in Lagos, sewage systems are unknown. In the more highly developed Urban areas water-borne systems with septic tanks are provided ; but for the great bulk of the people, even in urban areas, the conservancy system generally obtains. In the Northern Region composting of night soil and domestic refuse has become a method of choice and this has also been attempted in the much more humid atmosphere of Lagos and in other parts of Southern Nigeria. Some Native Administrations have proceeded with the construction of bore-hole latrines in their rural areas. Though these are very effective and quite popular, the old and well-tried *salga* is still the commonest type of latrine found in the smaller communities.

### (3) REFUSE DISPOSAL

52. Until recently, burning in small locally-made incinerators has been the commonest method of disposal, but with the introduction of the composting system a considerable number of communities dispose of their refuse in this fashion. Elsewhere, as in Lagos, Ibadan and Abeokuta, refuse is used for the reclamation of swamps borrow-pits and so on by control of tipping.



#### (4) INSPECTION OF NUISANCES

53. House-to-house inspections constitute a very large part of the work of the Sanitary Inspectorate. Offenders against various Sanitary Ordinances are detected by these inspections and prosecutions are made. In Lagos, for instance, during the year, 887 offenders were prosecuted for offences principally against the destruction of Mosquito Ordinance, the Public Health Ordinance, and the Births, Deaths and Burials Ordinance.

#### C. School Hygiene

54. In Lagos, School Clinics are now an established part of the Health Service. These clinics are run normally by three Medical Officers, all or any of whom may be local general practitioners. The services of an Ophthalmologist and a Dental Surgeon are also available.

55. Routine medical examination of 23,186 children was carried out and 620 eye examinations. 101 children were referred to the dental surgeons. 633 children showed evidence of avitaminosis at these routine examinations.

56. Outside Lagos, examinations of school children are conducted by Medical Officers in their own areas. These examinations, by comparison of spleen rates, number of hookworm infections and nutritional states, give an excellent indication of the progress of public health work in rural areas.

#### D. Labour Conditions

57. Draft regulations to control labour camps over all Nigeria were prepared during the year. These regulations will have modifications to suit the requirements of the different regions. Meantime, in anticipation of these regulations, firms and individuals constructing new camps are co-operating in providing amenities and complying with conditions proposed in the draft regulations.

58. In an attempt to raise the health standard of its camps, one of the larger firms has announced its intention to recruit several full-time medical officers for the care of its labourers.

59. Inspections were made during the year of labour camps and conditions in the Sapele-Benin Areas, the Enugu area and in the Minesfield Area. Surveys made in the Cameroons will be of great assistance in determining the siting and lay-out of camps proposed for that territory.

#### E. Food in relation to Health and Diseases

60. Diets in Prisons, Hospitals and other institutions are all controlled and supervised by the health inspectorate. Weight books are kept in all Prisons and particular attention is paid to monthly variations in prisoners' weight.

61. The main dietary problem of the country is deficiency of first class protein. It has been estimated that the average consumption of meat excluding fish is less than one ounce per person per day. In the North cattle are more plentiful and the average daily figure is slightly higher than this.

62. In some parts of the South many people never eat beef or mutton, due to its price. To bring the amount of first class protein up to the standard considered advisable medically, the domestic animal population of the country will have to be increased about fourfold.



63. Other deficiencies include those of the B complex, of which probably the most common is hyporiboflavinosis. In a recent survey in the Bida-Kontagora area 62 per cent of people examined showed evidence of deficiency. In many cases this was combined with a vitamin A deficiency.

64. Medical Field Unit Surveys also give interesting figures of nutritional deficiencies. In parts of the Cameroons for example, clinical hypovitaminoses were detected in 13.9 per cent of the people examined. This figure does not include many border line cases.

## VI. TRAINING OF MEDICAL SERVICES PERSONNEL

65. The greatest possible importance is attached to the training of all branches of the Medical Service. Existing training facilities are as follows:

(a) *Doctors*.—1948 was the last year of the old Medical School at Yaba. During the eighteen years of its life fifty-six of its students were granted certificates for practice in Nigeria. Its function will now be taken over by the University College, Ibadan, which will offer increased facilities for instruction. Already partial recognition of the Yaba qualification has been granted by the Royal College of Surgeons, England and the Royal College of Physicians, London. Selected graduates who pass the 2nd London M.B. may be admitted after one year's post-graduate study, either in West Africa or in the United Kingdom, to the final examination for the London, M.R.C.S., L.R.C.P., qualification. It is anticipated that after the Medical School of the University College, Ibadan, is firmly established, full reciprocity with London University will be granted.

(b) *Dentists*.—There are no local facilities for the training of Dentists. University College, Ibadan, may however bridge the gap. In this connection it is gratifying to learn that there are now some potential dental students studying there. Meantime the training of dental technicians continues and a basic standard has been worked out.

(c) *Pharmacists*.—Two Schools exist, one at Lagos and one at Zaria. These Schools offer a course based on the Chemists and Druggists Examination of the United Kingdom and the Lagos School trains students to a standard which approximates fairly closely to the United Kingdom standard. During the year sixty-six pupils were studying at Lagos. Fourteen students qualified as Chemists and Druggists for the academic year October, 1947 to September, 1948. The School in Zaria was founded for the training of Dispensers for the Northern Provinces. It grants a Dispenser's Certificate (Northern Provinces). During the year fourteen students attended the School.

(d) *Nurses*.—Twenty-three Government Hospitals where Nursing Sisters are stationed are recognised training Schools. Six months or a year of preliminary training depending on educational qualifications is now given before candidates are considered for general training. The general training course leading to the qualifying examination is of three years' duration and is modelled on standard lines, though freely adapted to serve Nigeria's need. Native Administration and Mission Hospitals, which comply with the requirements of the local Nursing Council, may present candidates for Government Examination and subsequent registration. Ninety-eight Government Nurses were registered in 1948. The Nigerian Nursing Council controls the standard of training Schools, and sets the examinations for registration. It maintains a register of all Nurses in Nigeria.

(e) *Midwives Grade I*.—The Local Midwives' Board has now decided as future policy to accept for training only women previously registered as Nurses. The course



is a comprehensive one lasting two years and the standard is comparable with that required for the Certificate of Central Midwives Board in the United Kingdom. In 1948, forty-one were trained.

(f) *Midwives Grade II*.—This course gives a good practical training in maternity and infant care to women of lesser education and extends over one year. Most of this training is in the hands of Missions. In 1948, 112 were registered.

(g) *Sanitary Inspectors*.—Training Schools exist in Lagos, Kano and Ibadan. The course admits students to the Local Examinations of the Royal Sanitary Institute. During the year of twenty-five students who sat the Royal Sanitary Institute Examination, six were successful. The School at Ibadan gives a course for locally trained Native Administration Sanitary Inspectors of a lower educational standard ; here the main emphasis is on practical rural hygiene and sanitation. The possession of the Royal Sanitary Institute Certificate is necessary before promotion above Grade II can be granted to Sanitary Inspectors.

(h) *Medical Field Unit Orderlies*.—The School at Makurdi is well equipped for the training of about 100 pupils per annum. It gives training in field methods of diagnosis and includes elementary microscopy and the identification of the more common diseases.

(i) *Dispensary Attendants*.—The first School for the training of these Native Administration Dispensary Attendants was opened in Kano in 1947. Elsewhere these men are trained by being attached to Government and Native Administration Hospitals for a preliminary period of twelve months before being sent out to their rural dispensaries. These men, numbering a little over 500, see and treat, to the best of their ability, the majority of diseases in the rural areas.

(j) *Native Administration Training*.—In Sokoto Province, training of elementary School boys and girls with a view to their local employment in the Medical Services of the Native Administration has begun. It consists of instruction in English and General Subjects, followed later by nursing training.

## VII. PORT HEALTH WORK AND ADMINISTRATION

66. No sea port or air port was declared infected during the year. A further decline in the incidence of epidemic disease in the area of Lagos sea and air ports was recorded. The smallpox figures provide a useful index :—

	1945	1946	1947	1948
Smallpox ..	155	123	28	10

67. Three cases of Typhoid fever occurred in this area during the year. No cases of Yellow Fever were reported.

68. Malaria was again the chief cause of sickness amongst merchant seamen in Lagos Port. Seven ships were reported to the Ministry of Transport for failure to take the necessary precautions for the protection of their crews. 9,798 canoes and 8,702 small boats were inspected for anopheline breeding. Larvae were found in 11 canoes and 41 small boats.

69. Plague—Rats were examined in Lagos, Port Harcourt and Calabar for evidence of plague infection, at all times with negative results. Flea counts were done as follows :—

	<i>Live Rats Examined</i>	<i>Flea Index</i>	<i>Cheopis Index</i>
Lagos .. ..	3,388	0.6	0.5
Port Harcourt ..	363	2.2	1.6



70. The volume of traffic passing through the International Air Ports at Lagos and Kano continued to increase. At Lagos there were 1,198 arrivals of aircraft on international flight.

### VIII. MATERNITY AND CHILD WELFARE

71. In the Southern Provinces by far the most popular of the Medical Services available to the people is the Maternity Service. Ante-natal clinics are invariably over-crowded and maternity beds are insufficient to cope adequately with the demand. In Lagos, for instance, in the Massey Street Maternity Hospital, 3,839 women were admitted during the year. This Hospital has only fifty-two beds thus giving an average in-patient stay for all patients, normal and abnormal of under five days.

72. Figures for the Massey Street Hospital are as follows :—

	1946	1947	1948
Ante-Natal out-patients ..	5,454	7,356	8,309
Total Attendances .. ..	24,702	34,350	35,241
In-patients .. .. .	3,074	3,050	3,839
Maternal mortality .. ..	11.5	20.7	14.16
Still birth rate .. ..	85.5	69.5	77.1

73. This picture is repeated all over the Southern Provinces. In rural areas the overwhelming demand is being met by the establishment of four-bedded lying-in wards in villages. Each of these is under the control of a Grade II Midwife who, on an average, will do a little over a hundred deliveries a year. Domiciliary Midwifery is also practised in some areas and it is the policy of the Department to extend this service treating the expansion of actual hospital service as a secondary approach to the problem.

74. The response in the North has not been so gratifying, mainly due to the condition of purdah under which most of the Northern women live. Prejudice is, however, being overcome and the starting of ante-natal clinics held at night has been a happy inspiration.

75. Post-natal clinics are not so well attended. In Lagos only 30 per cent of patients delivered at Massey Street have returned. The response elsewhere has been even more disappointing. So many of these women have long distances to travel to Hospitals and Dispensaries that it is hardly surprising that they wait until they, or their children, are ill before they attend. In the case of the latter this is all too frequently too late.

### IX. DENTAL SERVICE

76. During the year under review there were six Dental Officers and one Senior Dental Officer on the staff of the Dental Service. They were stationed at Lagos, Kaduna, Enugu and Jos, from each of which centres extensive touring was done.

77. Information was collected from surveys of children of school age in different parts of the country. These surveys have not yet been completed, but preliminary results show a low incidence of dental carries combined with a high incidence of gum conditions. This is found in all strata of African Society.

78. It is gratifying to learn that there are now a few potential dental surgeons studying at Ibadan University particularly as conditions in the United Kingdom since the inception of the National Health Service are more likely to stimulate retirement than recruitment so far as the Colonies are concerned.

79. The work done by the Dental Service, apart from the surveys referred to, is summarised below :—

Fillings	..	..	..	4,020
Dressings	..	..	..	960
Extractions	..	..	..	4,870
Scalings	..	..	..	1,754
Root Treatments	..	..	..	86
Dentures	..	..	..	1,169
Repairs	..	..	..	374
General Surgery cases	..	..	..	162
General Anaesthetics	..	..	..	290
Patients over 14 years	..	..	..	7,356
Patients under 14 years	..	..	..	353
Total Attendances	..	..	..	13,419
Total Patients	..	..	..	7,709

## X. HOSPITAL, DISPENSARIES AND OTHER UNITS

### A. Existing Facilities

80. These include :—

	<i>Govt.</i>	<i>N. Adms.</i>	<i>Mission</i>	<i>Private</i>
Hospitals .. ..	60	15	34	18
Small Maternity Homes	—	63	63	—
Total Beds available ..	3,780	1,987	2,547	186
Rural Dispensaries ..	—	526	—	—

Some figures indicative of the use of hospital and other material facilities include :—

Government and Native Administration Hospitals In-patients (new cases)	136,928
Government and Native Administration Hospitals Out-patients (new cases)	1,232,822
Government and Native Administration Hospitals major operations .. ..	29,719
Government and Native Administration Hospitals minor operations .. ..	24,908
Government and Native Administration Hospitals maternity cases .. ..	22,812
Native Administration Dispensaries, new cases .. .. .	1,789,067
Leprosy Service : Total cases treated .. .. .	36,830
Total injections Hydnocarpus preparations .. .. .	1,175,434

### B. Additions to Hospitals and Training Schools

81. The new Hospital at Abakaliki is now in full service, though the maternity ward is not yet complete. In the Cameroons a new hospital has been built for the Cameroons Development Corporation. In the North a thirty bedded hospital at Offa built by the Ilorin Native Administration was opened during the year.

82. Elsewhere existing hospitals were extended, as at Enugu where two wards, each of forty-five beds, were added to the Hospital. To Adeoyo Hospital, also, another ward was added.

83. The new Sanitary Inspectors Training School at Aba was opened during the year and by the end of the year was working at full swing. Work on the Nurses Preliminary Training School at Aba proceeded and it should be completed early in 1949. The same is true of the Preliminary Training School in Ibadan.



### **C. Rural Health Centres**

84. Two model centres are being built under the development plan to serve as a pattern for Native Administrations. These have both been sited in the Western Provinces and building has commenced. These Health Centres will operate a dispensary and maternity service and serve as a centre from which control and inspection of Native Administration Units will be exercised.

85. This pattern of development has already been applied on a smaller scale in various parts of the country and the larger object of a complete Health Centre is being kept in mind when rural dispensaries and Maternity Units are sited.

### **D. Medical Field Units**

86. Junior Staff have been recruited and sufficient trained to put six Units in the Field. Medical Officers continue to be short so that at no time during the year were more than three Units ready for service. These Units have been engaged on surveys in the Cameroons and in Benue Province. Many of the excess Junior Staff have assisted in the control of relapsing fever and cerebro spinal meningitis in the North. These Units have their own training schools at Makurdi where up to 100 Orderlies can be trained each year.

### **E. Research**

87. This is carried out mainly by four different Units. The Heat Research Unit in Yaba is investigating the heat problems of the country. The West African Trypanosomiasis Research Centre at Kaduna and the Yellow Fever Research Institute at Yaba conduct investigations into the specialities. Research into Leprosy is conducted by the B.E.L.R.A. Research Unit at Uzuakoli. Mention is made of all these in the body of their report under the various disease concerned.

## **XI. PANEL OF VISITORS**

88. Under the Nuffield Foundation visits were paid to this country by the following Specialists :—

Tuberculosis—F. R. G. Heaf, M.D., M.R.C.P., Tuberculosis Adviser to Ministry of Health.

Midwifery and Gynaecology—Douglas Miller, M.D., F.R.C.P., F.R.C.S., Gynaecologist. Lecturer in Gynaecology, Edinburgh University.

Social Medicine—Professor Andrew Topping, M.D., F.R.C.P., D.P.H., Professor of Preventive and Social Medicine University of Manchester.

89. Their visits have been of great assistance in planning the future work of the Department.

## **XII. MENTAL HEALTH**

90. The Mental Diseases Hospital at Lantoro, Abeokuta, continued its work under the Alienist. At the end of the year thirty-eight patients were under treatment. Occupational therapy was a notable feature in the programme of treatment.

91. This Hospital is an old prison and far from suitable but plans are practically complete for the erection of a new Mental Hospital under the Development Scheme which it is anticipated will be expanded to accommodate 800 to 1,000 inmates.

92. Lunatics are also confined in certain prisons throughout the country. At the end of the year 169 criminal and 298 civil lunatics were so confined.

### XIII. LABORATORY SERVICE

93. The emphasis during the year has been upon developing laboratories in the smaller hospitals. Two were opened, one at Ijebu-Ode and one at Warri. Several were brought up to date, and conversion of suitable rooms in several other hospitals was started with a view to opening laboratories in them next year. An arrangement was made during the year with the Senior Leprosy Officer whereby the Laboratories of the four Central Leprosy Settlements came under the Assistant Director of Laboratory Services who is responsible for the provision and training of staff.

94. A Regional Pathologist was posted during the year to Kano. He has under his control the six laboratories in the Northern Provinces and is expanding the work of the service in that area. Due to shortage of staff, it has been found impossible to post a Pathologist to the other Regions.

95. The production of vaccines and sera continued in addition to the general work of Pathological, Bacteriological and Biochemical Examinations. The following figures give some indication of the work done.

#### VACCINE AND SERA

Locally made smallpox vaccine issued during the year 146,910 15 doses per tube  
 Rabies vaccine prepared .. .. . 125,480 ml.  
 T.A.B. Vaccine prepared .. .. . 7,430 ml.

#### HISTOPATHOLOGY

Number of sets of tissue examined .. .. . 988  
 Number of animal brains examined for Rabies .. .. . 65  
 Number of positive for Rabies .. .. . 27

#### SEROLOGY (LAGOS ONLY)

Widal Tests performed .. .. . 773  
 Number positive .. .. . 40  
 Weil Felix tests performed .. .. . 216  
 Number positive .. .. . 18  
 Kahn Tests performed .. .. . 10,079  
 Number positive .. .. . 2,448  
 Ide Tests performed .. .. . 402  
 Number positive .. .. . 72  
 Kahn antigen prepared during the year .. .. . 1,156 ml.  
 Ide antigen prepared during the year .. .. . 2,686 ml.

**TABLE I**  
 RETURN OF DISEASES AND DEATHS FOR THE YEAR 1948  
 ALL RACES

No.	Diseases	In-Patients	Deaths	Out-Patients	Deaths
1	Typhoid and Paratyphoid fever .. .. .	56	12	6	—
2	Plague .. .. .	—	—	—	—
3	Scarlet fever .. .. .	—	—	58	—
4	Whooping cough .. .. .	177	10	2,272	—
5	Diphtheria .. .. .	2	—	24	—
6	Tuberculosis of the respiratory system ..	1,239	308	1,064	3
7	All other forms of Tuberculosis .. .. .	634	76	671	—
8	Purulent infection and septicaemia (non-puerperal) .. .. .	203	49	459	—
9	Dysentery .. .. .	3,299	221	19,244	—
10	Malaria .. .. .	9,928	264	115,581	1
11	Syphilis .. .. .	4,942	48	13,237	—
12	Influenza .. .. .	—	—	—	—
13	Smallpox .. .. .	1,157	124	354	—
14	Rabies .. .. .	8	2	—	—



No.	Diseases	In-Patient	Death	Out-Patient	Death
15	Typhus fever .. .. .	11	—	91	—
16	Diseases due to helminths .. .. .	5,744	35	76,654	—
17	Other infective or parasitic diseases .. .. .	11,786	570	36,972	—
18	Cancer and other malignant tumours of the bucal cavity and pharynx .. .. .	6	1	6	—
19	Cancer and other malignant tumours of the digestive organs and peritoneum .. .. .	83	30	1,413	—
20	Cancer and malignant tumours of the respiratory system .. .. .	11	—	234	—
21	Cancer and other malignant tumours of the uterus .. .. .	55	7	15	—
22	Cancer and other malignant tumours of the breast .. .. .	24	3	20	—
23	Cancer and other malignant tumours of other or unspecified organs.. .. .	255	42	377	—
24	Non-malignant tumours or tumours of undetermined nature. .. .. .	719	16	2,945	—
25	Rheumatic fever .. .. .	46	2	1,611	—
26	Chronic rheumatism and gout.. .. .	1,743	6	74,548	—
27	Diabetes mellitus .. .. .	130	20	303	—
28	Diseases of the thyroid and parathyroid glands	120	3	601	—
29	Other venereal diseases.. .. .	74	—	469	—
30	Vitamin deficiency diseases .. .. .	707	128	9,902	—
31	Pernicious and other anaemias .. .. .	1,623	127	14,409	—
32	Leukaemias and other diseases of the blood and blood-forming organs .. .. .	367	30	6,086	—
33	Chronic or acute alcoholism .. .. .	67	1	111	—
34	Other chronic poisonings .. .. .	48	11	11	—
35	Non-meningococcal meningitis .. .. .	131	39	159	—
36	Diseases of the medulla and spinal cord, other than locomotor ataxia .. .. .	25	6	21	—
37	Intra-cranial lesions of vascular origin .. .. .	334	95	419	—
38	Mental Disorders and deficiency .. .. .	364	13	155	—
39	Epilepsy .. .. .	223	22	876	—
40	Other diseases of the nervous system .. .. .	682	66	12,662	—
41	Diseases of the eye, ear and their annexa .. .. .	2,042	9	63,555	—
42	Pericarditis (including chronic rheumatic pericarditis) .. .. .	29	4	57	—
43	Chronic affections of the valve and endocardium	67	9	498	—
44	Diseases of the myocardium, including aneurysm of the heart .. .. .	430	136	901	—
45	Diseases of the coronary arteries and angina pectories .. .. .	31	6	38	—
46	Other diseases of the heart .. .. .	336	102	1,298	1
47	Arteriosclerosis and gangrene .. .. .	131	20	104	—
48	Other diseases of the circulatory system .. .. .	1,607	21	11,746	—
49	Bronchitis .. .. .	3,358	76	85,446	—
50 <sup>a</sup> b	Pneumonia and broncho pneumonia .. .. .	6,161	564	3,743	1
51	Pleurisy (non-tuberculous) .. .. .	412	12	1,624	—
52	Other diseases of the respiratory system .. .. .	786	56	13,379	—
53	Ulcer of the stomach or duodenum .. .. .	228	9	826	—
54	Diarrhoea and enterities (under 2 years of age)	522	61	12,848	—
55	Diarrhoea and enteritis (ulceration of the intestines) (2 years of age and over).. .. .	1,853	121	37,661	—
56	Appendicitis .. .. .	230	12	463	—
57	Hernia, intestinal obstruction .. .. .	7,662	195	5,728	—
58	Cirrhosis of the liver .. .. .	344	102	160	—
59	Other disease of the liver and biliary passages, including biliary calculi .. .. .	1,917	114	38,968	—
60	Other diseases of the digestive system .. .. .	2,699	149	51,754	—
61	Nephritis .. .. .	670	102	1,724	—
62	Other diseases of the kidneys and ureters .. .. .	237	7	498	—
63	Calculi of the urinary passages .. .. .	46	4	186	—
64	Diseases of the bladder, except tumours .. .. .	431	13	3,318	—
65	Diseases of the urethra, urinary abscess, etc.	1,328	50	3,326	—
66	Diseases of the prostate .. .. .	61	5	60	—



No.	Diseases	In-Patient	Death	Out-Patient	Death
67	Other diseases of the genital organs, not specified as venereal or connected with pregnancy of the puerperal state .. ..	6,582	55	23,905	—
68	Diseases and accidents of pregnancy ..	1,326	64	2,608	—
69	Abortion without mention of septic conditions	1,739	10	1,418	—
70	Post abortive infection .. .. .	26	2	104	—
71	Infection during child-birth and the puerperium .. .. .	116	9	24	—
72	Other accidents and diseases of childbirth and puerperium .. .. .	12,529	138	613	—
73	Diseases of the skin and cellular tissue ..	14,353	127	223,965	—
74	Diseases of the bones and organs of movement, except tuberculosis and rheumatism ..	2,137	22	26,413	—
75	Congenital malformations (still-births excepted)	137	23	353	—
76	Congenital debility .. .. .	154	42	1,049	—
77	Premature birth (Still-births excluded) ..	583	153	46	—
78	Injury at birth (still-births excluded) ..	30	8	49	—
79	Other diseases peculiar to the first year of life	403	84	713	—
80	Senility, old age .. .. .	83	33	343	—
81	Suicide .. .. .	16	4	16	—
82	Homicide .. .. .	54	5	88	—
83	Automobile accidents (All motor-driven road vehicles) .. .. .	357	14	111	—
84	Other violent or accidental deaths (automobile accidents excepted) .. .. .	10,502	277	126,251	—
85	Deaths of persons in military service during— and of civilians due to operations of war ..	222	2	1,475	—
86	Causes of illness unstated or ill-defined ..	1,238	62	18,552	—
87	Others .. .. .	3,693	227	2,158	—
	Totals .. ..	136,928	5,708	1,232,822	6

## APPENDIX I

### MEDICAL FIELD UNITS ANNUAL REPORT 1948-49

*General* The estimates for 1948-49 allowed for six Medical Field Units and the Training School, but Senior Service Staff shortages were such that it was only possible to maintain the School, keep two units in the field throughout the year and start up a third unit without a Medical Officer in July.

*No. 1 Unit* No. 1 (Benue) Medical Field Unit has been in the field in Benue Province all the year with a Medical Officer in charge, but with no Superintendent and a surplus of dressers which has entailed increased staff work at the expense of medical supervision during the surveys. The unit has worked in two and sometimes three or four sections under supervision of senior dressers with only periodic visits from the Medical Officer. With such an organisation some of the survey findings will be of doubtful value, but mass treatment of Trypanosomiasis, Yaws and Scabies and a vaccination campaign has been carried out on a larger scale than would have otherwise been possible.

Surveys and mass treatment were carried out in Agatu and Egbeddo Districts of Idoma Division, Mbakpa, Ra'av, Shangev and Wannune Areas of Tiv Division and Donga area and Mandated Area in Wukari Division. During the period since the last annual report and the end of December, 1948 a total of 90,386 persons were examined and another District of Wukari Division will have been surveyed by the end of March, 1949. During the surveys 52,575 persons or 56 per cent of those examined were vaccinated, but unfortunately the previous vaccination state and smallpox rate were not recorded nor was a follow-up carried out to check the percentage of successful vaccinations. Attendances have been fair and it is felt that owing to the attempt to deal with excessive numbers to obtain information about Trypanosomiasis the best use has not been made of these surveys from the general statistical survey aspect. The interest of the population is not sustained and attendance for courses of treatment tends to fall off once apparent cure has taken place, emphasising the need for courses to be as short as possible.

One section of the unit was called on to assist in the control of an outbreak of smallpox in Oturkpo during January, 1949.



*No. 2 Unit.* No. 2 (Cameroons) Medical Field Unit has been in the field in the Cameroons in two separate sections working far apart with poor communications and consequent difficulties over administration and supply have arisen.

*No. 2(a).* The main unit under the Medical Officer has carried out surveys and mass treatment at Missellele and Buea in Victoria Division and at Bekundu (Mbonge) Kembone (S. Bekundu), Tombel (Bakosi) and Kumba (Bafaw) in Kumba Division. A total of 13,954 persons has been examined in these surveys and 6,884 or 49 per cent have been vaccinated. Again unfortunately no records were made of previous vaccination state and smallpox rate or of the percentage of successful vaccinations. Apart from the village of Ngwandi where 100 per cent attendance was obtained, attendances at the surveys have been poor and even more disappointing has been the failure of patients to complete even one-day courses of treatment, and the general lack of interest on the part of the local population. The various difficulties encountered have slowed down the speed of the surveys and the numbers are not comparable with those of No. 1 Unit, but it is evident from the reports that the Medical Officer has carried out a most careful morbidity survey of the bodies presented for examination.

During June and July, 1948 this unit was placed at the disposal of Professor Gordon to assist in his survey of Filariasis due to *F. loa loa* and its transmission by Chrysops.

A survey at Marumba (Kombono) was completed in January, 1949, with the examination of a further 1,092 persons, 53 per cent of the estimated population, but details of the survey are not yet available.

A survey of the Malende area (Kumba) which will be completed by the end of March is now in progress in co-operation with a survey being conducted by Groupe Mobile No. 7 of the Service d'Hygiene Mobile du Cameroun, in the Mbanga area of French Cameroons.

*No. 2(b).* The second section of the Cameroon Unit under supervision of the Superintendent started to work independently in Bamenda Division in June, 1948 and has carried out surveys and mass treatment at Bali, Djottin Vitum (Banso) and Nkar (Banso) with the examination of 9,600 persons and the vaccination of 4,117 or 43 per cent of those examined. The previous vaccination state was not known, but 2.5 per cent of persons examined had had previous smallpox. Attendance was very poor in Bali (36 per cent) and not too good in Djottin (61 per cent) and Nkar (51 per cent) but the general reception of the unit appears to have been much better than in Victoria and Kumba Divisions.

A survey by this section now proceeding in the Bangwa area of Mamfe Division extending to the border of French Cameroons should be completed before the end of March.

*No. 3 Unit.* Lack of Senior Service staff has prevented the formation of No. 3 (Bornu) Medical Field Unit and the Junior Service staff have been attached to the Medical Officer, Katsina, and the Medical Officer of Health, Jos, for duty on relapsing fever control. The dressers have been scattered in pairs in villages where they have diagnosed and treated a few cases of relapsing fever each week and have carried out delousing measures with D.D.T. powder. Some useful work has no doubt been performed, but inspection indicates that such staff are not sufficiently reliable to work without constant supervision. The sooner this unit can be mobilised the better.

*No. 4 Unit.* The Junior Service staff of No. 4 (Abeokuta) Medical Field Unit were dispersed on cerebro-spinal meningitis control duty under the supervision of Sleeping Sickness Service Officers during the period April to June, 1948. In July, 1948 the unit was put on an organised basis and started survey work in Benue Province under supervision of a Superintendent and the guidance of a Sleeping Sickness Medical Officer.

Surveys of a limited nature and mass treatment have been carried out at Lafia, Obi and Doma in Lafia District and Shabu in Assaiko District of Lafia Division, and in the Udei Station area of Tiv Division. A total of 21,255 persons had been examined and 19,680 or 93 per cent vaccinated in Benue Province by the end of October, 1948 when the unit moved to Ogoja Province.

In Ogoja Province the first survey was carried out in Irruam District where 2,635 persons were examined in November, 1948. The unit is still engaged in surveys in Ogoja District pending the posting of a Medical Officer and transfer to Ilaro in Abeokuta Province.



## SUMMARY OF THE ANNUAL REPORT OF THE LABORATORY SERVICE FOR 1948

During 1948 the establishment of the Service was as follows :—

					<i>Provided for in the 1948-49 Estimates</i>	<i>Actual Staff</i>
<i>Senior Service :</i>						
Assistant Director, Lab. Service	..	..			1	—
Senior Pathologist	..	..	..	..	1	1
Pathologist	..	..	..	..	9	4
Assistant Pathologist	..	..	..	..	1	—
Senior Laboratory Superintendent	..	..			2	2
Laboratory Superintendent	..	..	..		10	8
<i>Junior Service :</i>						
Senior Technical Assistant	..	..	..		2	2
1st Class Technical Assistant	..	..			10	8
2nd-3rd Class Technical Assistant	..	..			51	50

The emphasis during 1948 has been placed upon developing the laboratories in the out-stations. It had been the endeavour to post trained Technical Assistants to as many hospitals as possible as soon as possible in order to provide for the already over-burdened Medical Officers reasonably good laboratory facilities whether or not a fully equipped laboratory is available. A start has been made with the regionalisation of the Laboratory Service ; in the Northern Region the six laboratories are now under the control of a Regional Pathologist in Kano, who, with a Laboratory Superintendent and an increased technical staff, is becoming independent in the matters of serology, biochemistry and histopathology of the central laboratories in Lagos. Two further laboratories are about to be opened in the Northern Region. Shortage of staff has as yet prevented similar regionalisation in the Eastern and Western Regions.

The Headquarters of the Laboratory Service are in Lagos. The Medical Research Institute at Yaba comprises (1) the Administrative Headquarters, (2) the Bacteriology Laboratory and (3) the Vaccine Laboratory. Here also was done the Histopathology for all out-stations ; 1,247 tissues were examined during the year. The Bacteriology Department carried out all bacteriological examinations for the Lagos area and the serological examinations for out-stations. In the Vaccine Laboratory glycerinated and lanolated Smallpox Vaccine was produced from sheep, providing some four million doses per annum, for distribution throughout British West Africa. Anti-Rabies Vaccine, also produced from sheep, was made for the whole of Nigeria to the extent of some 125,000 ccs. per annum. Some 7,500 ccs. of T.A.B. (Phenolised) Vaccine were also produced during 1948.

The Pathology Department, Lagos, carries out the clinical pathology for the hospitals and dispensaries in the Lagos area. Some of the figures for 1948 are as follows :—

Blood Examinations	..	..	..	..	..	8,845
Stool	„	..	..	..	..	7,558
Urine	„	..	..	..	..	6,651
Smear	„	..	..	..	..	6,058
Biochemical Examinations	..	..	..	..	..	429

461 autopsies were performed in 1948, and in the Histology Department some 2,129 blocks were prepared and cut. Medicolegal examinations numbered 119.

The training of Technical Assistants is one of the most important functions of the Pathology Department. Systematic lectures and demonstrations are given to trainees by Pathologists and Senior Laboratory Superintendents and thereafter the probationary Technical Assistants are given a year's supervised training in the Department before being sent as reliefs to out-station laboratories.





